it extended also to the right side, and also backwards as far as the occipital region. The brain was compressed by the growth, but otherwise normal.

The liver was not found to be very much enlarged, but there was a large, rounded, encapsulated tumour intimately adherent to the under surface of the right lobe, with its outer surface continuous with that of the liver. This growth measured 4 inches from before backwards, and $3\frac{1}{2}$ inches from side to side at its broadest part. Upon the upper surface of the liver there were three nodules showing a white, cheesy-looking substance when cut into.

The lungs were congested, but there was no consolidation nor evidence of any new growth. There were no hæmorrhages in the pleura. The heart, kidneys, and spleen were apparently healthy. There were some enlarged glands at the roots of the lungs which when cut open showed a soft pigmented substance, and the retroperitoneal glands at the root of the mesentery formed a large lobulated mass presenting the same appearance on section.

The stomach and intestines appeared healthy and neither growths nor hæmorrhages were to be found in them. One long bone—the right femur—was removed for examination. This was selected at hazard, as there was neither swelling nor bruise about any of the limbs. On cutting, however, through the periosteum of this bone, blood extravasation was found beneath in two places, around the upper end of the shaft below the trochanters, and around the lower end above the condyles. The periosteum was not thickened.

Microscopic examination showed the sarcomatous growth within the skull to be infiltrating the dura mater, though not extending to the inner surface. Extensive hæmorrhages had taken place between the cells in both internal and external tumours. Sections of the nodules from the upper surface of the liver showed a similar small-celled growth, the liver substance being shrunken and attenuated in their midst into thin bands and certain parts existed in which no trace of secreting cells was to be seen. Sections from the retroperitoneal glands and bronchial glands showed similar collections of round cells interspersed with the remains of hæmorrhages. The kidneys and lungs showed no abnormality.

REMARKS.

The subject of disseminated sarcoma associated with cutaneous and other hæmorrhages was dealt with by the late Dr. Hilton Fagge in *Guy's Hospital Reports* for 1881, his paper containing an account of six cases. Further cases have since been reported by Drs. Kingsford, Harris, Anderson, and others. It is the relation between the growths and the hæmorrhages which renders the matter peculiarly interesting. Dr. Fagge pointed out the fact that a large proportion of the fatal cases of purpura hæmorrhagica occurring at Guy's during a period of twenty years were of this nature. In some of his cases, notably his first case, some of the purpuric spots were raised, forming indurated nodules, which, when microscopically examined, were found to consist of new growths, probably originating as he suggested, in minute emboli from a primary tumour. In a most interesting communication published in the *BRITISH MEDICAL JOURNAL* by Mr. Jonathan Hutchinson in 1888, a picture of the leg of a gentleman is shown with an eruption upon it of more than a hundred sarcomatous nodules, possibly due to embolism from a growth in connection with the lumbar vertebrae.

This view, however, as Dr. Fagge admitted, does not exhaust the subject. The profound alteration in the composition of the blood which obtains in disseminated sarcoma may have a considerable part to play in the production of the hæmorrhages in mucous or cutaneous surfaces. The ecchymoses in the eyelids and about the forehead of the patient I have described were not raised, and forcibly reminded me of the cutaneous hæmorrhages one sees in scurvy, congenital occlusion of the bile duct, and other diseases of a like character.

The subperiosteal hæmorrhage around the shaft of the femur is to be noted in this connection, bringing as it does the disease, with its intense anæmia and hæmorrhages into the skin, into close relation with infantile scurvy in its clinical aspect.

OBSERVATIONS ON THE TREATMENT OF EPILEPSY.¹

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FIFTY cases were selected from the female wards of the Epileptic Department of the Birmingham City Infirmary. Of the male cases under my care, so many work in the grounds that I thought perhaps the exact number of fits that occurred amongst them might not be so accurately recorded. All the women work indoors, either in the wards or in the laundry, and are therefore more closely under observation. These 50 cases were chosen haphazard, in order to avoid the fallacy arising from special selection. Their ages varied from 16 to 70 years. They were all subject to true epileptic convulsions with loss of consciousness. Many of them also, as one would expect, suffered from the minor attacks which occur in epilepsy. The fits recorded in this paper refer to attacks in which the loss of consciousness and struggling were sufficient to attract the attention of a second person, so that they could be entered in the book as a fit. Of the fifty patients originally chosen, a few passed out of observation by reason of removal from the infirmary, or on account of some other unforeseen cause; but I was able to keep a full and complete record of 43, and these form the basis of my observations.

For about twelve months—the actual period being 348 days—the ordinary routine treatment of the cases was continued. The diets varied; most of the patients were taking 3 oz. of cooked meat a day, and a few took as much as 5 oz. Medicinally a mixture containing $7\frac{1}{2}$ gr. each of bromide of potassium and bromide of ammonium was given according to the case and the severity of the attacks; and in the event of numerous fits occurring within a short period of time other drugs were given, such as those contained in the following mixture: 10 gr. of bromide of potassium, 15 gr. of chloral hydrate, in 1 oz. of chloroform water. This period then formed a fair example of the life of these people, such as many of them had been living for years.

During the 348 days the total number of fits recorded for the 43 cases was 5,001, or, in other words, 14.37 fits occurred on an average amongst the whole number for each day. This is not the average number of each individual case, but the average number amongst all the cases together. I have put the average in this way because if the number of fits experienced by each person were taken as an average, the number which I must presently compare would be expressed as fractions of unity instead of whole numbers, and numbers below unity are more difficult to compare rapidly. Books were kept in the rooms or wards in which the women worked, and daily the number of fits were recorded by the nurse on duty. This number, then, 14.37, may be taken as the average number of fits occurring daily amongst the 43 cases during a period of twelve months.

The first change made was this: For eleven weeks—the actual time being seventy-nine days—all the cases were put upon a uniform diet, which I call "A" diet, containing: Meat, 3 oz.; bread, 18 oz.; potatoes, 12 oz.; butter, 1 oz.; tea, 2 pints; gruel, 1 pint; and for medicine they were ordered a mixture of soda and gentian. It happened occasionally that during the occurrence of a succession of severe fits a mixture containing bromide of potassium was given for a short period, usually from one to three days. The main difference, then, between this period and the last was that the diet was made uniform, and the bromide was only given occasionally, so occasionally indeed that only a few had it at all. It is interesting to note that during these seventy-nine days the whole number of fits was 1,119, or 14.16 a day; a record which is practically the same as the average taken as a standard.

The amount of meat in the diet was now decreased during a period of six weeks, the actual number of days being forty-three; all the patients being again on a uniform diet. This diet I call "B" diet: Meat, 2 oz.; bread, 14 oz.; potatoes,

¹ Abstract of a paper read before the Birmingham and Midland Counties Branch of the British Medical Association.

12 oz.; butter, $1\frac{1}{2}$ oz.; milk, 1 pint; tea, 2 pints; gruel, 1 pint. At the same time they were put back upon the bromide mixture once or thrice a day, according to the requirements of the case. The result here was very striking. During the forty-three days the whole number of fits recorded was 399, or only 9.28 a day, a very decided decrease in the number. Since the drug treatment was the same as that during the long period of twelve months the improvement appears to have been due to the decrease in the animal food. A fallacy might, however, have crept in here. It might be suggested, for instance, that as these observations were made during the months of January and December, the time of the year might affect the result. Accordingly, I counted up the number of fits that occurred during forty-three days of the December and January of the preceding year, when the patients were taking the ordinary routine diets, and found that the total number was 782, which gives an average of 18.19 fits a day. It will be seen that this shows the decrease during the observed period in an even more marked manner than before, and it certainly shows that the time of year did not assist in lowering the average.

The result of this "B" diet seemed so satisfactory that they were kept upon it, and after this the drug treatment was alone changed. A mixture containing 5 grains of biborate of soda was ordered three times a day, and at the end of a week 10 grains of bromide was added on account of the general complaint of nausea. This was continued for twenty-eight days. The total number of fits was now 304, or 10.87, still showing a decrease, but not so great a decrease as when bromide alone was given. To test more keenly the effect of the "B" diet, all the patients were put upon it for three weeks, the actual time being twenty-two days, and no medicine was given at all except when circumstances demanded it. At first sight it may appear that a mixture containing bromide and chloral hydrate given in this way detracts from the value of the observations. It is not so, however, because during the whole time I was watching these particular cases this draught was given at times, so that it is a constant and not an intermittent factor. It will also be clear that treatment of some kind must be made use of now and then if the patients are likely to suffer by its being withheld. During this period, then, of the "B" diet, and discontinuance of daily medicine, the number of fits rose again, being 266 as a total, or 12.09 a day. Even then it was less than the average of 14.37.

It has been my object in this note to recount briefly the results of my observations without discussing in anyway their theoretical aspects. The principal conclusion that I was able to arrive at is that during a period of five months, when all the cases were on a diet containing less meat food than their usual amount, the average number of daily fits was distinctly lowered. It was to come to some definite numerical conclusion on this point that the foregoing observations were made. I am quite aware of the fact that these observations do not extend over a sufficient length of time to make the apparent results anything more than probabilities. In making trustworthy reports on a large number of cases for even so short a time as eighteen months, the difficulties are very great—the accurate charting of the fits alone requiring great care and attention—and several of my cases had to be omitted on account of unavoidable lacunæ in the notes. The results are at any rate interesting, and I hope to be able to carry out similar observations more completely at a future date.

THE BROMIDE OF STRONTIUM IN EPILEPSY.¹

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THE various modifications of epilepsy are of such serious import to the unfortunate individual who may suffer from them, and indeed to his family, that I am induced to bring under your notice this evening one of the bromides I have

¹ Read at the meeting of the Medical and Scientific Society of the Catholic University, Dublin.

found in some cases to afford some relief in reducing if not curing the manifestations of the condition. I regret the number of cases is limited, and that therefore no general deduction can be drawn from them; but I think they are sufficiently encouraging to induce others to give this bromide a trial in suitable cases. My attention was drawn to the use of bromide of strontium some two years ago by reading some reports from the French medical papers in which it had been found useful when the other bromides had no beneficial effect or could not be borne. I determined to give it a trial in a case I had then under my care, and found the result so satisfactory that I have since used it alone or in combination with the other bromides in four cases.

CASE I.—A gentleman, aged 45, married, no history of syphilis or injury family history markedly neurotic, consulted me in May, 1892, complaining of attacks of vertigo, which lasted a few seconds, and occurred several times a day; the first attack two years ago in Melbourne, when he fell, but asserts he never loses consciousness; he had been treated for stomach and aural vertigo, but without good results. The number of attacks increasing; health generally good; well nourished; heart and kidneys normal; hearing same both sides and normal; complains his memory not so good as formerly. Wife says he turns pale and looks queer when he gets an attack. When speaking to me in my study he suddenly got pale, the muscles of his face twitched, and he nearly fell from chair; in a moment he was all right and said, "There it is." He had distinctly lost consciousness, though he was not aware of it. I ordered him a purgative dose of calomel and santonin powder next morning, but he passed no worms. I wish to dwell upon this, as many years ago I was asked by a medical man to call upon a specialist in London in reference to his son, aged 10, who had a severe epileptic attack when playing. The child had had convulsions when young, but no other attack. The specialist gave a very bad prognosis, and was of opinion that probably the boy would be permanently epileptic. The child, however, got a dose of castor oil, followed by a powder of santonin, passed a round worm, and from that day to this—now fifteen years ago—never had another attack. I have known similar cases to this, and you will find Watson and others have likewise. So do not let this apparently simple irritant escape you. Of course in such cases the nervous system cannot be in its normal condition. To return, however, to the patient. I gave him a combination of the bromides of sodium, potassium, and ammonium, 5 grs. of each three times a day, increasing the dose to 15 grs. of each three times a day. This lessened the number of attacks, but he still had them two or three times a week. I then gave 10 grs. of each of the bromide of strontium and potassium three times a day, and the patient had not an attack for a month. I continued this dose, and reduced the attacks to one slight one every six weeks. The gentleman returned to Australia, and I have since learned he remains practically free from the attacks so long as he takes the medicine, but they return on his leaving it off, which he does now and then against my advice.

CASE II.—Gentleman, aged 35. Fits since his 15th year, both grand and petit, generally once a week. No history of syphilis or injury. Good family history. Has taken pot. bromide frequently. Controls fits but depresses much. I gave him 10 grains pot. bromide and 10 grains strontium bromide three times a day. He assured me the medicine did him more good than any he had taken; sometimes has not an attack for six weeks. He has continued this a year and a-half, and although it does not prevent, it certainly much lessens the number and severity.

CASE III.—Boy, aged 8 years; healthy parents; no injury or worms. For the last four years he will suddenly fall; no convulsions, but complete insensibility, lasting from few seconds to two minutes. This will occur sometimes twenty times a day; quite bright after attack; mental condition fair; healthy-looking. Has been taking bromide of potassium and sodium 5 grs. to 15 grs. three times a day. This has to some extent lessened the number, but still four to eight daily. Gave him 5 grs. pot. bromide and 5 strontium bromide three times a day. Attack reduced to one or two a week.

CASE IV.—A man, aged 25, has had fits since his 8th year, generally one or two a week; no syphilis; sister had fits from 10 years; fell into fire when 16, and died from burns. Has taken bromide of potassium frequently, but not regularly; lessens number of fits, but depresses much. I gave him 10 grains bromide of strontium three times a day; had not fit for three weeks, and then not for a month; has been and is taking medicine for last three months; consider doing him much good, and says does not lower him as other medicines.

None of these cases were cured, but all of them much relieved. In all of them other bromides had been employed before, and the combination of the strontium seemed to be more beneficial. It has long been noticed that a combination of the bromides act more favourably than any one, and I would advise you to impress on the patient that he must take the medicine for a long period, whether it has at first a beneficial effect or not. I think the bromide of strontium well entitled to further trial.

OWING to the great pressure in the Extern Department, the Board of Management of the Hospital for Sick Children, Queen Street, Belfast, has decided to appoint an additional assistant-surgeon and assistant-physician. A large number of candidates are already in the field, and a stiff contest is expected.